

## PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-050387  
 (43)Date of publication of application : 22.02.1994

(51)Int. Cl. F16F 15/26  
 F02B 77/00

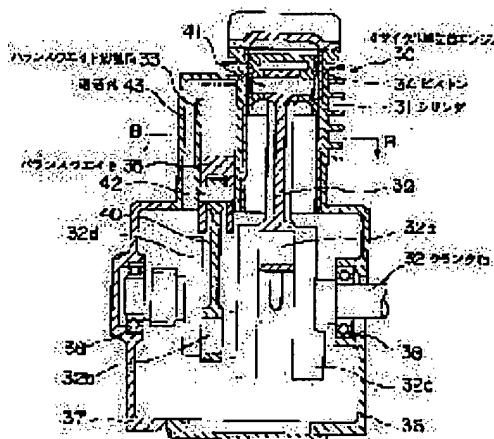
(21)Application number : 04-218794 (71)Applicant : MITSUBISHI HEAVY IND LTD  
 (22)Date of filing : 27.07.1992 (72)Inventor : KAWACHI KOKICHI

## (54) BALANCER DEVICE FOR SINGLE CYLINDER ENGINE

## (57)Abstract:

**PURPOSE:** To obtain a small-sized and simple constitution by installing a balance weight sliding cylinder installed integrally with a cylinder, balance weight which is made of the material having a large specific gravity and moves in reciprocation in the sliding cylinder, with a phase difference of  $180^\circ$  for a piston, and a return passage to the inside of a crankcase which communicates to the sliding cylinder.

**CONSTITUTION:** A balance weight sliding cylinder 33 is installed integrally in close to and in parallel to a cylinder 31, and a balance weight 35 is gently fitted inside the sliding cylinder 33, and the product of the weight of the weight 35 and the revolution radius of a crank pin 32b is made equal to the product of the weight of a piston 34 and the revolution radius of a crank pin 32a. In order to obtain the compact constitution of the sliding cylinder 33 and the balance weight 35, the weight 35 is made of the material having a large specific gravity. A communication hole 43 permits the communication between the upper part of the sliding cylinder 33 and the inside of a crank case 36. The primary vibration due to the reciprocating movement of the piston 34 can be absorbed by the weight 35 which moves in reciprocation, having the phase shifted by  $180^\circ$ . With this constitution, a balancer device can be accommodated in small-sized and compact form, and also the whole of an engine can be made small-sized and compact.



## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application]

other than the examiner's decision of  
rejection or application converted  
registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's  
decision of rejection]

[Date of requesting appeal against  
examiner's decision of rejection]

[Date of extinction of right]

Copyright (C); 1998, 2003 Japan Patent Office